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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/507,007

**Applicant(s)**

OGAWA ET AL.

**Examiner**

ARADHANA SASAN

**Art Unit**

1615

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 October 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7, 9-12 and 14-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-12 and 14-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Status of Application***

1. The remarks and amendments filed on 10/09/08 are acknowledged.
2. Claims 8 and 13 were cancelled. New claim 22 was added. Claims 1 and 20-21 were amended.
3. Please note that claim 1 was amended, but the status identifier recites "original" instead of "currently amended". Appropriate correction is required.
4. Claims 1-7, 9-12 and 14-22 are included in the prosecution.

***Response to Arguments***

**Rejection of claims 1, 6-8, 15 under 35 USC § 102(b)**

5. In light of Applicant's cancellation of claim 8, the rejection of claim 8 is rendered moot.
6. Applicant's arguments, see Page 5, filed 10/09/08, with respect to the rejection of claims 1, 6-8 and 15 under 35 USC § 102(b) as being anticipated by Watanabe et al. (US 4,603,047) have been fully considered but are not persuasive.

Applicant argues that because Watanabe fails to teach the limitations of claim 13, it is believed that claim 1 is now patentable thereover.

This is not persuasive because claim 1, as currently amended, recites "barium sulfate particles or zinc oxide particles" and "the coverage with barium sulfate particles is 10-70% with respect to the surface area of said substrate powder or the coverage with zinc oxide particles is 40-90 % with respect to the surface area of said substrate powder". Since there is a choice between barium sulfate particles or zinc oxide

particles, and Watanabe teaches barium sulfate firmly adhering to flaky substrates such as mica (Abstract), amended claim 1 is still anticipated by Watanabe.

Applicant argues that Watanabe further fails to disclose that the BaSO<sub>4</sub> or ZnO are adhered to the substrate particles in the form of protrusions. Applicant argues that the instances of BaSO<sub>4</sub> or ZnO on the surface of the instantly claimed substrate particles come as irregularly shaped islands, and not a continuous covering. Applicant argues that such protrusions are a result of the use of seed particles which act as nuclei for crystallization of BaSO<sub>4</sub> or ZnO.

This is not persuasive because Applicant has not provided any evidence that the flaky substrate disclosed by Watanabe (mica) does not have protrusions. Watanabe discloses that the flaky substrate mica has a firmly adhering coating of barium sulfate (Abstract). Therefore, barium sulfate will firmly adhere to the protrusions present on the flaky substrate. Moreover, Applicant has not disclosed the dimensions of the protrusions to distinguish the instantly claimed substrate from that disclosed by the prior art.

Applicant argues that Watanabe discloses that metal oxides can also be precipitated on the pigment, col. 2, lines 17-21. Applicant argues that such metal oxides cannot be considered seed particles because they do not act as crystallization nuclei. Applicant argues that the oxide particles of Watanabe are precipitated, that is, applied onto the pigment, after the pigment is coated onto the substrate particle and that any crystallization of BaSO<sub>4</sub> (pigment) that may occur in the synthesis of Watanabe's particles necessarily occurs before the oxide particles are added. Applicant argues that such oxide particles cannot then act as seed particles.

This is not persuasive because the metal oxides disclosed by Watanabe that are precipitated on are interpreted as seed particles which can be used to coat a substrate and will inherently act as crystallization nuclei. Moreover, the instant specification discloses that seed particles include titanium dioxide and zinc oxide (Page 12, [0084]).

Therefore, the rejection of 06/18/08 is maintained.

**Rejection of claims 1, 6-8, 15 under 35 USC § 102(b)**

7. In light of Applicant's cancellation of claim 8, the rejection of claim 8 is rendered moot.
8. Applicant's arguments, see Page 6, filed 10/09/08, with respect to the rejection of claims 1, 6-8 and 15 under 35 USC § 102(b) as being anticipated by Noguchi et al. (US 5,380,360) have been fully considered but are not persuasive.

Applicant argues that because Noguchi fails to teach the limitations of claim 13, it is believed that claim 1 is now novel and patentable thereover.

This is not persuasive because claim 1, as currently amended, recites "barium sulfate particles or zinc oxide particles" and "the coverage with barium sulfate particles is 10-70% with respect to the surface area of said substrate powder or the coverage with zinc oxide particles is 40-90 % with respect to the surface area of said substrate powder". Since there is a choice between barium sulfate particles or zinc oxide particles, and Noguchi teaches flaky pigments with barium sulfate coating (Col. 1, lines 8-20), amended claim 1 is still anticipated by Noguchi.

Applicant argues that Noguchi further fails to disclose that the BaSO<sub>4</sub> or ZnO are adhered to the substrate particles in the form of protrusions. Applicant argues that the instances of BaSO<sub>4</sub> or ZnO on the surface of the instantly claimed substrate particles

come as irregularly shaped islands, and not a continuous covering. Applicant argues that such protrusions are a result of the use of seed particles which act as nuclei for crystallization of BaSO<sub>4</sub> or ZnO.

This is not persuasive because Applicant has not provided any evidence that the flaky pigment grains disclosed by Noguchi (mica) do not have protrusions. Noguchi discloses flaky pigments with barium sulfate coating. Therefore, barium sulfate will firmly adhere to the protrusions present on the flaky pigment grain. Moreover, Applicant has not disclosed the dimensions of the protrusions to distinguish the instantly claimed substrate from that disclosed by the prior art.

Therefore, the rejection of 06/18/08 is maintained.

**Rejection of claims 1-3, 6, 12, 13 and 15 under 35 USC § 102(b)**

9. In light of Applicant's cancellation of claim 13, the rejection of claim 13 is rendered moot.

10. Applicant's arguments, see Page 7, filed 10/09/08, with respect to the rejection of claims 1-3, 6, 12, 13 and 15 under 35 USC § 102(b) as being anticipated by Noguchi et al. (US 4,956,019 – Noguchi '019 hereinafter) have been fully considered but are not persuasive.

Applicant argues that Noguchi '019 fails to teach the limitations of claim 8, it is believed that claim 1 is now patentable thereover.

This is not persuasive because claim 1, as currently amended, recites "barium sulfate particles or zinc oxide particles" and "the coverage with barium sulfate particles is 10-70% with respect to the surface area of said substrate powder or the coverage with zinc oxide particles is 40-90 % with respect to the surface area of said substrate

powder". Since there is a choice between barium sulfate particles or zinc oxide particles, and Noguchi '019 teaches a flaky colored pigment with zinc oxide attached to the surface (Col. 1, lines 6-10), amended claim 1 is still anticipated by Noguchi.

Applicant argues that Noguchi '019 further fails to disclose that the BaSO<sub>4</sub> or ZnO are adhered to the substrate particles in the form of protrusions. Applicant argues that the instances of BaSO<sub>4</sub> or ZnO on the surface of the instantly claimed substrate particles come as irregularly shaped islands, and not a continuous covering. Applicant argues that such protrusions are a result of the use of seed particles which act as nuclei for crystallization of BaSO<sub>4</sub> or ZnO.

This is not persuasive because Applicant has not provided any evidence that the flaky colored pigment disclosed by Noguchi (mica) do not have protrusions. Noguchi '019 discloses a flaky colored pigment with zinc oxide attached to the surface. Therefore, zinc oxide will firmly adhere to the protrusions present on the flaky colored pigment. Moreover, Applicant has not disclosed the dimensions of the protrusions to distinguish the instantly claimed substrate from that disclosed by the prior art.

Therefore, the rejection of 06/18/08 is maintained.

**Rejection of claims 1-15 under 35 USC § 103(a)**

11. Applicant's arguments, see Page 7, filed 10/09/08, with respect to the rejection of claims 1-15 under 35 USC § 103(a) as being unpatentable over Noguchi et al. (US 4,956,019 – Noguchi '019 hereinafter) in view of Noguchi et al. (6,086,666 – Noguchi '666 hereinafter) have been fully considered but are not persuasive.

Applicant argues that neither Noguchi patent recites that the BaSO<sub>4</sub> or ZnO are adhered to the substrate particles in the form of protrusions. Applicant argues that such

coatings in the Noguchi patents thus cover their respective substrate particles in essentially a continuous covering, which would amount to essentially the entire surface area of such particles. Applicant argues that the instances of BaSO<sub>4</sub> or ZnO on the surface of the instantly claimed substrate particles come as irregularly shaped islands, and not a continuous covering. Applicant argues that such protrusions are a result of the use of seed particles which act as nuclei for crystallization of BaSO<sub>4</sub> or ZnO.

This is not persuasive because Applicant has not provided any evidence that the flaky powder base material disclosed by Noguchi '019 (mica-titanium oxide complex) do not have protrusions. Noguchi '019 discloses flaky pigments with zinc oxide attached to the surface. Therefore, zinc oxide will firmly adhere to the protrusions present on the flaky powder base material. Moreover, Applicant has not disclosed the dimensions of the protrusions to distinguish the instantly claimed substrate from that disclosed by the prior art.

Therefore, the rejection of 06/18/08 is maintained.

**Rejection of claims 16 and 18-19 under 35 USC § 103(a)**

12. Applicant's arguments, see Page 8, filed 10/09/08, with respect to the rejection of claims 1-15 under 35 USC § 103(a) as being unpatentable over Watanabe et al. (US 4,603,047) have been fully considered but are not persuasive.

Applicant argues that the oxide particles of Watanabe cannot be seed particles as instantly disclosed and claimed. Applicants note that Watanabe discloses metal oxides that are precipitated on the pigment, col. 2, lines 17-21. Applicant argues that such metal oxides cannot be considered seed particles because they do not act as crystallization nuclei. Applicant argues that the oxide particles of Watanabe are



precipitated, that is, applied onto the pigment, after the pigment is coated onto the substrate particle. Applicant argues that any crystallization of BaSO<sub>4</sub> (pigment) that may occur in the synthesis of Watanabe's particles necessarily occurs before the oxide particles are added and that such oxide particles cannot then act as seed particles.

This is not persuasive because the metal oxides disclosed by Watanabe that are precipitated on are interpreted as seed particles which can be used to coat a substrate and will inherently act as crystallization nuclei. Moreover, the instant specification discloses that seed particles include titanium dioxide and zinc oxide (Page 12, [0084]).

Therefore, the rejection of 06/18/08 is maintained.

**Rejection of claims 20-21 under 35 USC § 103(a)**

13. Applicant's arguments, see Page 9, filed 10/09/08, with respect to the rejection of claims 20-21 under 35 USC § 103(a) as being unpatentable over Watanabe et al. (US 4,603,047) in view of Noguchi et al. (US 5,380,360) have been fully considered but are not persuasive.

Applicant argues that Watanabe fails to disclose a seed particle, which is a key limitation of claim 16 and that Noguchi also fails to disclose a seed particle.

This is not persuasive because the metal oxides disclosed by Watanabe that are precipitated on are interpreted as seed particles which can be used to coat a substrate and will inherently act as crystallization nuclei. Moreover, the instant specification discloses that seed particles include titanium dioxide and zinc oxide (Page 12, [0084]).

Therefore, the rejection of 06/18/08 is maintained.

**Rejection of claim 17 under 35 USC § 103(a)**

14. Applicant's arguments, see Page 10, filed 10/09/08, with respect to the rejection of claim 17 under 35 USC § 103(a) as being unpatentable over Noguchi et al. (US 4,956,019 – Noguchi '019 hereinafter) in view of Watanabe et al. (US 4,603,047) have been fully considered but are not persuasive.

Applicant argues that the oxide particles of Watanabe cannot be seed particles as instantly disclosed and claimed. Applicant argues that Watanabe discloses that metal oxides can also be precipitated on the pigment, col. 2, lines 17-21. Applicant argues that such metal oxides cannot be considered seed particles because they do not act as crystallization nuclei. Applicant argues that the oxide particles of Watanabe are precipitated, that is, applied onto the pigment, after the pigment is coated onto the substrate particle and that any crystallization of BaSO<sub>4</sub> (pigment) that may occur in the synthesis of Watanabe's particles necessarily occurs before the oxide particles are added. Applicant argues that such oxide particles cannot then act as seed particles.

This is not persuasive because the metal oxides disclosed by Watanabe that are precipitated on are interpreted as seed particles which can be used to coat a substrate and will inherently act as crystallization nuclei. Moreover, the instant specification discloses that seed particles include titanium dioxide and zinc oxide (Page 12, [0084]).

Therefore, the rejection of 06/18/08 is maintained.

**Provisional Rejection of claims 1, 15 and 16 under obviousness type double patenting**

15. Applicant's arguments, see Page 11, filed 10/09/08, with respect to the rejection of claims 1, 15 and 16 under 35 USC § 103(a) on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5 and 7-11 of

copending Application No. 10/471,087 ('087 hereinafter) have been fully considered but are not persuasive.

Applicant argues that the claims of the '087 application are directed to making what is essentially a doped barium sulfate, or a barium sulfate that includes a portion of metallic ions. Applicant argues that, as admitted by the Examiner, the powder of '087 is a barium sulfate that lacks a substrate particle. Applicant argues that the connection between the two is so casual--barium sulfate--as not to properly constitute the basis for an obviousness rejection of any kind.

This is not persuasive because the difference of the substrate powder (from instant claims) would have been obvious to one of ordinary skill in the art as an added component in the cosmetic composition of the '087 Application.

Therefore, the rejection of 06/18/08 is maintained.

**Provisional Rejection of claims 1-3, 7, 12 and 15 under obviousness type double patenting**

16. Applicant's arguments, see Page 12, filed 10/09/08, with respect to the rejection of claims 1-3, 7, 12 and 15 under 35 USC § 103(a) on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 4-5, 10 and 13 of copending Application No. 11/721,472 ('472 hereinafter) have been fully considered but are not persuasive.

Applicant argues that the modified powder of the '472 application does not correspond with the composite powder of the present invention, which is a substrate powder bearing a coating, which coating can be either barium sulfate or zinc oxide on the surface of substrate powder. Applicant argues that in the present invention, the

coating is barium sulfate or zinc oxide, while in the cited '472 application, the base powder (i.e., substrate) is barium sulfate or zinc oxide. Applicant argues that the two are unrelated.

This is not persuasive because claim 10 of the '472 application also recites titanated mica as the base powder, claim 13 of the '472 application recites zinc oxide particle coated titanate mica and barium sulfate coated titanated mica. One of ordinary skill in the art would find it obvious to use the coated (with zinc oxide or barium sulfate) titanated mica in a cosmetic application and add hydrophobizing agents and surfactants depending on the desired cosmetic usage. For instance, hydrophobizing agents and surfactants would be added for lotion or cream applications.

Therefore, the rejection of 06/18/08 is maintained.

17. New claim 22 is included in the rejection under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. (US 4,603,047). Since this rejection was necessitated by Applicant's amendment, this action is made FINAL.

#### **MAINTAINED REJECTIONS:**

The following is a list of maintained rejections:

#### ***Claim Rejections - 35 USC § 102***

18. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

19. Claims 1, 6-7 and 15 remain rejected under 35 U.S.C. 102(b) as being anticipated by Watanabe et al. (US 4,603,047).

The claimed invention is a composite powder comprising a flaky substrate powder and barium sulfate particles or zinc oxide particles that adhere, in protrusions, to the surface of the substrate powder.

Watanabe teaches flaky substrates, such as mica, with a firmly adhering coating of barium sulfate that is used in cosmetics (Abstract). "For coating, this substrate in a particle size of about 1-100  $\mu\text{m}$  ... can be suspended in water and ... coated with a layer of barium sulfate. To do this, an aqueous solution containing barium ions as well as an aqueous solution containing sulfate ions are added ... the suspension is vigorously stirred during the addition and the solutions are added at such a rate that the precipitated barium sulfate is deposited on the surface of the flaky substrate" (Col. 1, lines 49-60). "The quantities in which the reactants are employed are not in themselves particularly critical. In particular, the quantity of the barium sulphate precipitated onto the substrate can be varied within wide limits, depending on the desired properties with regard to adhesive strength, extension and transparency on the skin" (Col. 2, lines 3-8). "In general, the amount of barium sulphate in the finally produced flaky pigment can range broadly, e.g., from 10 to 40 weight percent based on the total weight of the pigment ..." (Col. 3, lines 46-49). Examples disclose the production of barium sulfate coated mica particles where the pH of the solution is maintained in the range of 6.0-8.0 (Example 7), pH of 8.0 (Example 12), pH of 8.5 (Example 13) and pH of 7.0 (Example 14).

Therefore, the limitations of claims 1, 6-7 and 15 are anticipated by the teachings of Watanabe.

20. Claims 1, 6-7 and 15 remain rejected under 35 U.S.C. 102(b) as being anticipated by Noguchi et al. (US 5,380,360).

Noguchi teaches that flaky pigments with barium sulfate coating where the barium sulfate grain size is from 0.5 to 2.0 $\mu$ m and their use in cosmetics as extender pigments for face powder with excellent skin adhesiveness are known in the art (Col. 1, lines 8-20). Noguchi teaches "an ultra-fine granular barium sulfate-coated flaky pigment and a method of preparing the same, in which a barium ion-containing aqueous solution and a sulfate ion-containing aqueous solution are simultaneously added to a suspension of fine flaky pigment grains, such as those of mica, talc, kaolin or sericite, with stirring in the presence of a complexing agent capable of forming a complex compound with barium ion whereby ultra-fine granular barium sulfate grains having a mean grain size of 0.1  $\mu$ m or less are formed on the surfaces of the fine flaky pigment grains" (Col. 2, lines 24-36). The percentage of barium sulfate with respect to the mass of the pigment preferably is about 5-60% (Col. 2, lines 67-68). Examples of complexing agents including glutamic acid are disclosed (Col. 3, lines 3-7). Noguchi also teaches that "any agent capable of forming a complex with barium ions under reaction conditions is included" (Col. 3, lines 28-30). An example of a compact powder with an extender pigment (barium sulfate coated muscovite) is disclosed (Col. 11, lines 13-27).

Therefore, the limitations of claims 1, 6-8 and 15 are anticipated by the teachings of Noguchi.

21. Claims 1-3, 6, 12, and 15 remain rejected under 35 U.S.C. 102(b) as being anticipated by Noguchi et al. (US 4,956,019 – Noguchi '019 hereinafter).

Noguchi '019 teaches a flaky colored pigment comprising fine flaky powder as base material and zinc oxide attached to the surface (Col. 1, lines 6-10). Fine flaky particles that form the base material include mica-titanium oxide complexes and the amount of zinc oxide in the finished pigment is about 5 to 70% based on the total weight of the flaky color pigment (Col. 1, lines 37-46). Methods of making the flaky pigment are disclosed (Col. 1, line 47 to Col. 2, line 21). Example 8 discloses a mica/titanium oxide complex (assuming blue interference color) with zinc oxide deposited on the surface (Col. 5, line 59 to Col. 6, line 7). Example 10 discloses silver-colored mica/titanium oxide complex that is used to obtain a light blue, glossy pigment with zinc oxide deposited on the surface (Col. 6, lines 26-45). The use of these pigments in cosmetics is disclosed (Col. 1, lines 29-34).

Therefore, the limitations of claims 1-3, 6, 12, and 15 are anticipated by the teachings of Noguchi '019.

***Claim Rejections - 35 USC § 103***

22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

23. Claims 1-7, 9-12 and 14-15 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Noguchi et al. (US 4,956,019 – Noguchi '019 hereinafter) in view of Noguchi et al. (6,086,666 – Noguchi '666 hereinafter).

The teaching of Noguchi '019 is stated above.

Noguchi '019 does not expressly teach the shape of the barium sulfate or the zinc oxide particles.

Noguchi '666 teaches coating a flaky (i.e. platelet shaped) powder with particles of zinc oxide and barium sulfate (Col. 2, lines 8-11). The particles of barium sulfate have an average diameter of 0.1 to 2.0 microns and are essentially platelet shaped, whereas zinc oxide is needle-shaped with an average major-axis (i.e. long axis) diameter of 0.05 to 1.5 microns (Col. 2, lines 18-28). The process for manufacturing the coated flaky powder is also disclosed (Col. 2, lines 30-46). Coating with particles of barium sulfate is disclosed (Col. 3, lines 3-16) along with the process for coating with particles of zinc oxide (Col. 3, lines 23-36). A cosmetic containing the pigment is also disclosed (Col. 2, lines 48-51). The amount of barium sulfate is 10 to 50 parts by weight, relative to 100 parts by weight of the flaky powder (Col. 8, claim 4). The amount of zinc oxide is from 50 to 200 parts by weight, relative to 100 parts by weight of the flaky powder (Col. 8, claim 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make a flaky pigment with a mica-titanium oxide complex as the base material and zinc oxide particles as the coating, as suggested by Noguchi '019, combine it with the needle-shaped zinc oxide coating and platelet shaped barium sulfate coating of a flaky powder, as taught by Noguchi '666, and produce the instant invention.



One of ordinary skill in the art would have been motivated to do this because Noguchi '666 teaches that "the ultraviolet radiation shielding pigment ... which comprises a flaky powder having particle coated with particles of barium sulfate having a specific diameter and needle crystal particles of zinc oxide has a high shielding power for ultraviolet radiation, particularly UV-A, and if it is used in a cosmetic, it is excellent not only in extensibility and adhesiveness, but also in resistance to color dulling, properties required of cosmetics" (Col. 2, lines 52-59).

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Regarding instant claim 1, the limitation of the flaky substrate would have been obvious over the flaky powder as base material taught by Noguchi '019 (Col. 1, lines 6-10). The limitation of barium sulfate particles or zinc oxide particles would have been obvious over the zinc oxide taught by Noguchi '019 (Col. 1, lines 6-10) and over the zinc oxide and barium sulfate taught by Noguchi '666 (Col. 2, lines 8-11). The limitation of adhering to the surface of the substrate powder would have been obvious over the zinc oxide attached to the surface of the flaky powder as taught by Noguchi '019 (Col. 1, lines 6-10). The limitation of coverage with barium sulfate particles that is 10-70% with respect to the surface area of the substrate powder would have been obvious over the 10 to 50 parts by weight of barium sulfate relative to 100 parts by weight of the flaky

powder, as taught by Noguchi '666 (Col. 8, claim 4). Since the substrate powder and the amount of barium sulfate are taught by Noguchi '666, one with ordinary skill in the art would find that the surface area covered by the barium sulfate is an obvious variant that can be manipulated during the process of routine experimentation, unless there is evidence of criticality or unexpected results. The limitation of 40-90% coverage with zinc oxide particles would have been obvious over the 5 to 70% of zinc oxide in the finished pigment as taught by Noguchi '019 (Col. 1, lines 37-46).

Regarding instant claims 2-3, the limitations of the substrate powder that generates interference colors and titanated mica would have been obvious over the mica-titanium oxide complexes taught by Noguchi '019 (Col. 1, lines 37-46, Example 8, Col. 5, line 59 to Col. 6, line 7, Example 10, Col. 6, lines 26-45).

Regarding instant claim 4, the limitation of uniform particle diameters of barium sulfate or zinc oxide particles would have been obvious over the average diameter of 0.1 to 2.0 microns of barium sulfate as taught by Noguchi '666 (Col. 2, lines 18-28).

Regarding instant claim 5, the limitation of the uniform distance between the barium sulfate or zinc oxide particles would have been obvious over the uniform particle dimensions of barium sulfate and zinc oxide as taught by Noguchi '666 (Col. 2, lines 18-28). One with ordinary skill in the art would know that if uniformly sized particles adhere to the surface a base material using the same procedure as that of Noguchi '019 or Noguchi '666, the spacing or distance between the particles will also be uniform.

Regarding instant claim 6, the adhesion rate of barium sulfate particles or zinc oxide particles to the substrate that is 15-100 weight % would have been obvious over

the amount of zinc oxide in the finished pigment that is about 5 to 70% based on the total weight of the flaky color pigment, as taught by Noguchi '019 (Col. 1, lines 37-46).

Regarding instant claim 7, the limitation of barium sulfate particles would have been obvious over the barium sulfate particles taught by Noguchi '666 (Col. 2, lines 8-11).

Regarding instant claims 9-11, the limitation of flaky barium sulfate particles and approximately square flakes of barium sulfate would have been obvious over the platelet shaped barium sulfate particles taught by Noguchi '666 (Col. 2, lines 18-28). The number average particle diameter of barium sulfate of instant claim 11 would have been obvious over the average diameter of 0.1 to 2.0 microns of barium sulfate particles, as taught by Noguchi '666 (Col. 2, lines 18-28).

Regarding instant claim 12, the limitations of zinc oxide particles and 40-90% coverage with zinc oxide particles would have been obvious over the 5 to 70% of zinc oxide in the finished pigment as taught by Noguchi '019 (Col. 1, lines 37-46).

Regarding instant claim 14, the limitation of long needle-shape particles of zinc oxide would have been obvious over the needle-shaped zinc oxide with an average major-axis (i.e. long axis) diameter of 0.05 to 1.5 microns, as taught by Noguchi '666 (Col. 2, lines 18-28).

Regarding instant claim 15, the cosmetic comprising the composite powder would have been obvious over the cosmetic compositions with the pigments taught by

Noguchi '019 (Col. 1, lines 29-34) and the cosmetic containing the pigment taught by Noguchi '666 (Col. 2, lines 48-51).

24. Claims 16, 18-19 and 22 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. (US 4,603,047).

The teaching of Watanabe with respect to coating a substrate with barium sulfate is stated above.

Watanabe does not expressly teach seed particles that are allowed to coexist in a slurry solution of the flaky substrate powder.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the method of coating a substrate with barium sulfate particles, as taught by Watanabe, and modify the process by adding seed particles during the process of routine experimentation.

One with ordinary skill in the art would do so because Watanabe teaches that seed particles such as metal oxides can also be precipitated on the pigment (Col. 2, lines 17-21). Seed particles, as disclosed in the instant specification, include titanium oxide and zinc oxide (Page 12, [0084]). Since titanium dioxide, zinc oxide and aluminum oxide are disclosed by Watanabe, one with ordinary skill in the art would find it obvious to include them in the process of coating a substrate. In this case the titanium oxide and other metal oxides would act as the seed particles upon which the particle would start forming.

Regarding instant claims 16 and 22, the method of producing a composite powder adhering barium sulfate would have been obvious over the method of coating a

substrate with barium sulfate particles as taught by Watanabe (Col. 1, lines 49-60). The limitation of the seed particles would have been obvious over the metal oxides can also be precipitated on the pigment, as taught by Watanabe (Col. 2, lines 17-21).

Regarding instant claim 18, the amount of seed particles that is 0.1-15 weight % with respect to the substrate powder would have been obvious over the 5 to 30 weight percent of the metal oxides (based on the total weight of the pigment), as taught by Watanabe (Col. 3, lines 49-53).

Regarding instant claim 19, the limitation of the pH range 7-9 would have been obvious over the pH of the solution that is maintained in the range of 6.0-8.0 (Example 7), pH of 8.0 (Example 12), pH of 8.5 (Example 13) and pH of 7.0 (Example 14) as taught by Watanabe.

25. Claims 20-21 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. (US 4,603,047) in view of Noguchi et al. (US 5,380,360).

The teaching of Watanabe is stated above.

Watanabe does not expressly teach a complexing agent.

The teaching of Noguchi with respect to the process of making a fine granular barium sulfate-coated flaky pigment with a complexing agent is stated above.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the method of coating a substrate with barium sulfate particles, as taught by Watanabe, and modify the process by adding seed particles during the process of routine experimentation, combine it with the process of making a fine granular barium sulfate-coated flaky pigment with a complexing agent, as taught by Noguchi, and produce the instant invention.

One with ordinary skill in the art would do so because Noguchi teaches that a complexing agent is capable of forming a complex compound with the barium ion which leads to formation of particles on the surfaces of the fine flaky pigment grains (Col. 2, lines 24-36).

Regarding instant claims 20-21, the limitation of the complexing agent would have been obvious over the complexing agent taught by Noguchi (Col. 2, lines 24-36). The amount of complexing agent recited in instant claim 21 is a manipulatable parameter and would have been an obvious variant during the process of routine experimentation unless there is evidence of criticality or unexpected results.

26. Claim 17 remains rejected under 35 U.S.C. 103(a) as being unpatentable over Noguchi et al. (US 4,956,019 – Noguchi '019 hereinafter) in view of Watanabe et al. (US 4,603,047).

The teaching of Noguchi '019 is stated above.

Noguchi '019 does not expressly teach seed particles that are allowed to coexist in a slurry solution of the flaky substrate powder.

Watanabe teaches that seed particles such as metal oxides can also be precipitated on the pigment (Col. 2, lines 17-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the method of coating a substrate with zinc oxide particles, as taught by Noguchi '019, combine it with the metal oxides that can also be precipitated on the pigment, as taught by Noguchi '019, and produce the instant invention.

One with ordinary skill in the art would do so because Watanabe teaches that seed particles such as metal oxides can also be precipitated on the pigment (Col. 2, lines 17-21). Seed particles, as disclosed in the instant specification, include titanium oxide and zinc oxide (Page 12, [0084]). Since titanium dioxide, zinc oxide and aluminum oxide are disclosed by Watanabe, one with ordinary skill in the art would find it obvious to include them in the process of coating a substrate. In this case the titanium oxide and other metal oxides would act as the seed particles upon which the particle would start forming.

### ***Double Patenting***

27. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thornton*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a

terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

28. Claims 1, 15 and 16 remain provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5 and 7-11 of copending Application No. 10/471,087 ('087 hereinafter).

Although the conflicting claims are not identical, they are not patentably distinct from each other because instant claims are directed to a composite powder with a flaky substrate powder and a method of producing the barium sulfate coated composite powder while claims of '087 are directed to a process for producing a barium sulfate based powder. The difference is the substrate powder of instant claims and the specific metallic ions of claims of '087. The specific metallic ions are described in the instant specification and include lithium, sodium, potassium and magnesium ions (Instant Specification, Page 14, [0093]). Therefore, instant claims are obvious over the claims of '087.

29. Claims 1-3, 7, 12 and 15 remain provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 4-5, 10 and 13 of copending Application No. 11/721,472 ('472 hereinafter).

Although the conflicting claims are not identical, they are not patentably distinct from each other because the difference is that claims of '472 include a hydrophobizing agent and a cationic surfactant. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the barium sulfate coated particles in a cosmetic as disclosed in instant claims and add hydrophobizing agents and surfactants depending on the desired cosmetic usage. For instance, surfactants and hydrophobizing agents would be added for lotions and creams.



These are provisional obviousness-type double patenting rejections because the conflicting claims have not in fact been patented.

***Conclusion***

30. No claims are allowed.

31. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

32. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aradhana Sasan whose telephone number is (571) 272-9022. The examiner can normally be reached Monday to Thursday from 6:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward, can be reached at 571-272-8373. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Aradhana Sasan/  
Examiner, Art Unit 1615

/MP WOODWARD/  
Supervisory Patent Examiner, Art Unit 1615